Compound Interest

Q1 Find the balance for these amounts at the given compound interest rate over 5 years (calculate to the nearest cent):

(i) £5 earning 6% p.a.

(ii) £500 earning 8% p.a.

(iii) £832 earning 4.9% p.a.

(iv) £480 earning 1.3% monthly

(v) £2 500 earning 4.8% per 6 months

Q2 Philip is planning on borrowing £6 000 to buy a new car. The money will be borrowed at 6% p.a. compounded annually over 5 years. How much does Philip pay back **altogether** for the car?

Q3 In order to save for the deposit on a new well 3 years from now, Jack and Jill decide to put £5 000 into an interest bearing account which pays them 12% p.a. interest, compounded *monthly.*

(i) How much is in their account after 1 month?

(ii) What is the amount of money in their account after the first year?

(iii) What is the value after three years?

(iv) A new well will cost them £8 000. Will they have enough?

Q4 Amelia is to receive 4.5% pay increase each year. What will her salary be after 8 years if she starts on £25 500?

Q5 Andrew puts £15 000 in an interest bearing deposit for 5 months at 6% p.a. compounded *monthly.* How much interest will Andrew's deposit earn at the end of 5 months?

Q6 Sarah has £1 400 to invest and has a choice of two investments:

GREAT SAVER: a simple interest rate of 10.25% p.a.

or FIRST CHOICE: a compound interest rate of 9% p.a.

Which account is the better for Sarah if she only wishes to invest for 4 years?

Q7 Lucy decides to make 4 investments of £500 every 6 months for two years.
The investment yields 8% p.a. compounded every 6 months.

(i) How much does the first £500 amount to after 2 years?

(ii) What will the second £500 be worth at the end of this time period?

(iii) What will the total of all four investments be at the end of the 2 years?

Q8 Isaac has £2 000 to invest for 12 years and has narrowed his choice to two investments:

ACCOUNT 1: earns 9% p.a. simple interest

ACCOUNT 2: 6.8% p.a. compound interest

Which is the best investment for Isaac?

Q9 John's salary is £32 500 now. His salary is tied to the inflation rate and revised annually accordingly. If the inflation rate is 8.5% p.a. for 7 years, what is John's salary after 7 years?

Q10 A country has 1 250 000 people and is growing at a rate of 6.75% p.a.
Calculate to the nearest 100 people, the country's population in 6 years time?

Q1-5 ANSWERS

A) £6.69	H) £1 056.82	O) £7 249.63
B) £375	I) £1 089.71	P) £7 800
C) £378.77	J) £3 995.33	Q) £8 029.35
D) £612.50	K) £5 050	R) £36 263.57
E) £734.66	L) £5 489.75	S) £37 459.26
F) £947.63	M) £5 634.13	T) NO
G) £1 041.86	N) £7 153.84	U) YES

Q6-10 ANSWERS

A) £562.43	H) £57 529.62
B) £584.93	I) 1 756 300
C) £2 203.61	J) 1 849 800
D) £2 208.16	K) ACCOUNT 1
E) £2 294.72	L) ACCOUNT 2
F) £19 337.50	M) FIRST CHOICE
G) £51 837.50	N) GREAT SAVER